

WHAT IS CLAIMED IS:

1. An actuator comprising a magnetic, resilient, shape memory member formed by a substance having a twin structure, and a magnetic field generator, at least part of said magnetic, resilient, shape memory member being disposed in a slanting magnetic field generated from said magnetic field generator such that said twin structure is reoriented by said magnetic field, whereby said shape memory resilient member is driven.
2. The actuator according to claim 1, wherein said twin structure is reoriented by stress generated in said slanting magnetic field.
3. The actuator according to claim 1, wherein said magnetic, resilient, shape memory member is located at a position at which there is the largest slanting magnetic field.
4. The actuator according to claim 1, wherein said resilient shape memory member is a coil spring or a plate spring.
5. The actuator according to claim 1; wherein said magnetic field is 20 kOe or less.
6. The actuator according to claim 1, wherein said substance having a twin structure is an Fe-Pd alloy.
7. The actuator according to claim 1, wherein said actuator is driven around the martensitic transformation-starting temperature  $M_s$  of said substance having a twin structure.
8. The actuator according to claim 1, wherein said magnetic field generator is disposed at both ends of said magnetic, resilient, shape memory member.